

RV Investigator

ADCP Processing Report

Voyage #:	IN2017_T02
Voyage title:	Collaborative Australian Postgraduate Sea Training Alliance Network Pilot Voyage 1 (CAPSTAN 1)
Depart:	Henderson Monday 14 Nov 2017
Return:	Hobart, Sunday 26 Nov 2017
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1 Summary

Data was collected during in2017_t02 for the second half of the voyage. Data was not collected while on the shelf. Data was collected using UHDAS and post-processed using CODAS.

The os150(150kHz) ADCP was not operational during this voyage.

The ADCP was operated in narrowband mode with 8m bins for the duration of the voyage.

Internal triggering was used as external triggering was found to be unstable on previous voyages.

The drop keel was at 1.2m for the voyage.

See the voyage computing and electronics report for more details regarding data acquisition.

2 Processing Background

The University of Hawaii's CODAS software was used for data post-processing. Revision 2417:49ecfa0cc6c5 dated Sep 13 2017 was used.

3 Processing Notes

Overall data quality was good. There is a large gap in coverage while over the shelf.

There are other small gaps in data cause by a low percent good on ping returns.

Some profiles were edited out, both manually and using CODAS's automatic processing. The dataset was not rotated.

Some ringing was found. The top 1 – 2 bins, or about 35 meters, were edited out when needed. This effect of this was minimal while on station and did not always occur while underway.

CTD wire interference can be seen in some bins while on station. This has been edited out.

4 netCDF Data Headers

```
netcdf in207_t02_os75nb {
dimensions:
    time = 2125 ;
    depth_cell = 60 ;
variables:
    int trajectory ;
        trajectory:standard_name = "trajectory_id" ;
    double time(time) ;
        time:long_name = "Decimal day" ;
        time:units = "days since 2017-01-01 00:00:00" ;
        time:C_format = "%12.5f" ;
        time:standard_name = "time" ;
        time:data_min = 317.17087962963 ;
        time:data_max = 328.730601851852 ;
    double lon(time) ;
        lon:missing_value = 1.e+38 ;
        lon:long_name = "Longitude" ;
        lon:units = "degrees_east" ;
        lon:C_format = "%9.4f" ;
        lon:standard_name = "longitude" ;
        lon:data_min = 115.142377777778 ;
        lon:data_max = 147.502836111111 ;
    double lat(time) ;
        lat:missing_value = 1.e+38 ;
        lat:long_name = "Latitude" ;
        lat:units = "degrees_north" ;
        lat:C_format = "%9.4f" ;
        lat:standard_name = "latitude" ;
        lat:data_min = -43.70285 ;
        lat:data_max = -31.9311333333333 ;
    float depth(time, depth_cell) ;
        depth:missing_value = 1.e+38f ;
        depth:long_name = "Depth" ;
        depth:units = "meter" ;
        depth:C_format = "%8.2f" ;
        depth:positive = "down" ;
        depth:data_min = 29.93f ;
        depth:data_max = 973.99f ;
    float u(time, depth_cell) ;
        u:missing_value = 1.e+38f ;
        u:long_name = "Zonal velocity component" ;
        u:units = "meter second-1" ;
        u:C_format = "%7.2f" ;
        u:data_min = -0.5802755f ;
        u:data_max = 0.6271613f ;
    float v(time, depth_cell) ;
        v:missing_value = 1.e+38f ;
        v:long_name = "Meridional velocity component" ;
        v:units = "meter second-1" ;
        v:C_format = "%7.2f" ;
        v:data_min = -0.2931321f ;
        v:data_max = 0.5464263f ;
    short amp(time, depth_cell) ;
        amp:missing_value = 32767s ;
        amp:long_name = "Received signal strength" ;
        amp:C_format = "%d" ;
        amp:data_min = 7s ;
        amp:data_max = 218s ;
    byte pg(time, depth_cell) ;
        pg:missing_value = -1b ;
        pg:long_name = "Percent good pings" ;
        pg:C_format = "%d" ;
        pg:data_min = 0b ;
        pg:data_max = 100b ;
```

```
byte pflag(time, depth_cell) ;
    pflag:long_name = "Editing flags" ;
    pflag:C_format = "%d" ;
    pflag:data_min = 0b ;
    pflag:data_max = 7b ;
float heading(time) ;
    heading:missing_value = 1.e+38f ;
    heading:long_name = "Ship heading" ;
    heading:units = "degrees" ;
    heading:C_format = "%6.1f" ;
    heading:data_min = -160.9817f ;
    heading:data_max = 159.4649f ;
float tr_temp(time) ;
    tr_temp:missing_value = 1.e+38f ;
    tr_temp:long_name = "ADCP transducer temperature" ;
    tr_temp:units = "Celsius" ;
    tr_temp:C_format = "%4.1f" ;
    tr_temp:data_min = 13.2322f ;
    tr_temp:data_max = 21.12167f ;
byte num_pings(time) ;
    num_pings:long_name = "Number of pings averaged per ensemble" ;
    num_pings:units = "None" ;
    num_pings:C_format = "%d" ;
    num_pings:data_min = -124b ;
    num_pings:data_max = 120b ;
float uship(time) ;
    uship:missing_value = 1.e+38f ;
    uship:long_name = "Ship zonal velocity component" ;
    uship:units = "meter second-1" ;
    uship:C_format = "%9.4f" ;
    uship:data_min = -6.210232f ;
    uship:data_max = 6.144945f ;
float vship(time) ;
    vship:missing_value = 1.e+38f ;
    vship:long_name = "Ship meridional velocity component" ;
    vship:units = "meter second-1" ;
    vship:C_format = "%9.4f" ;
    vship:data_min = -5.392684f ;
    vship:data_max = 5.236183f ;

// global attributes:
    :featureType = "trajectoryProfile" ;
    :history = "Created: 2018-05-18 05:37:11 UTC" ;
    :Conventions = "COARDS" ;
    :software = "pycurrents" ;
    :hg_changeset = "2417:49ecfa0cc6c5" ;
    :title = "Shipboard ADCP velocity profiles" ;
    :description = "Shipboard ADCP velocity profiles from in2017_t02 using instrument
os75nb" ;

    :cruise_id = "in2017_t02" ;
    :sonar = "os75nb" ;
    :yearbase = 2017 ;
}
```